

# Village of Barrington

## Fire Sprinkler and Fire Alarm Amendments to Building Codes

Excerpted from Building Code Adoption Ordinance #03-3050 adopted January 13, 2003

The Village of Barrington requires almost all new structures to be equipped throughout with automatic fire sprinkler systems and automatic fire alarm systems. These systems are also required in cases of 100% remodeling of single family residential structures and more than 50% remodeling of all other structures. The following amendments to the *2000 International Building Code* and the *2000 International Residential Code* set forth the detailed fire detection and suppression requirements of the Village of Barrington.

### Amendments to the 2000 International Building Code

Section 901.2.1 of the Barrington Building Code is hereby added to provide as follows:

#### **“Section 901.2.1 Special requirements.**

1. All sprinkler control valves shall be electronically supervised with approved tamper switches.
2. Backflow prevention shall be provided on all automatic sprinkler systems. Specifications shall be provided to the Village of Barrington Department of Public Works for final approval.
3. All occupancies in which automatic sprinkler systems are installed shall be maintained at all times at a temperature of not less than 40° Fahrenheit.”

Section 903.2 of the Barrington Building Code shall provide as follows:

**“Section 903.2 Where required.** Automatic sprinkler systems shall be installed and maintained in full operating condition as specified in this code, in the following locations:

1. As specified in the applicable Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3 in new construction for all buildings, structures, public garages, open parking structures and outside building canopies not separated from the main structure by a minimum 2-hour fire resistance rated assembly; and
2. As specified in the applicable Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3 in new additions to all existing buildings and structures; and
3. As specified in the applicable Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3 throughout all existing buildings and structures to which a new addition is attached, when the existing building or structure is not separated from the addition by minimum 3-hour fire resistance rated walls, or where there is more than one minimum 3-hour fire resistance rated side-hinged single door assembly with automatic closure between the addition and the

original structure; and

4. Provided that the building or structure has is to contain only a B, M or R-3 use group, as specified in Section 903.3.5.1.2 throughout all existing buildings and structures less than 5,000 square feet in aggregate net floor area (as defined in this section) and not otherwise subject to the automatic sprinkler system requirements of the model code, in which one of the following has occurred:
  - a. Remodeling, reconstruction or alteration (as defined in this section) of 50% or more of the aggregate net floor area of the building or structure (as defined in this section); or
  - b. A change of any portion of the building or structure to an occupancy type having a higher fire grading as determined by Table 903.2; and
5. As specified in the applicable Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3 in all existing buildings or structures greater than 5,000 square feet in aggregate net floor area (as defined in this section) and not otherwise subject to the automatic sprinkler system requirements of the model code, in which one of the following has occurred:
  - a. Remodeling, reconstruction or alteration (as defined in this section) of 50% or more, or 5,000 square feet or more, of the aggregate net floor area of the building or structure (as defined in this section); or
  - b. A change of occupancy of any portion of the building or structure to an occupancy type having a higher fire grading as determined by Table 903.2,

provided, however, that the automatic sprinkler system shall be installed in no more than two phases, with the first phase to be completed with and fully serve the area being altered or undergoing the change of occupancy type, and the second phase to be completed with the alteration of, or change of occupancy type to, any other portion of the building or structure. In addition, the area included in the second phase must be provided with approved fire detection at the time the first phase of the automatic sprinkler system is installed.

**Exceptions:** Automatic sprinkler systems shall not be required in any of the following:

1. Private garages designed to house four or less vehicles.
2. Electrical equipment rooms where the voltage exceeds 250 volts. Sprinklers shall be permitted to be omitted provided that all of the following are completed:

- and
- a. An alternate approved suppression system is installed; and
  - b. The rooms are provided with an approved fire detection system in accordance with Section 907; and
  - c. 2-hour fire resistance rated walls, floors and ceilings are installed;
  - d. Door openings are protected with minimum B label 1½ -hour fire rated door assemblies; and
  - e. A minimum 20 BC fire extinguisher is provided immediately outside the entrance to the electrical room.
- 3. Use Group U, when approved by the building official and the fire official.
  - 4. In telecommunication equipment buildings, an automatic fire suppression system shall not be required in those spaces or areas occupied exclusively for telecommunication equipment, associated electrical power distribution equipment, batteries and standby engines, provided that those spaces or areas are equipped throughout with an automatic fire detection system in accordance with Section 907 and are separated from the remainder of the building with fire separation assemblies consisting of 1-hour fire resistance rated walls and 2-hour fire resistance rated floor/ceiling assemblies.
  - 6. Existing buildings or structures smaller than 1,000 square feet in aggregate net floor area (as defined in this section), provided they are separated from all other structures on all sides by a distance of not less than 10 feet.

For the purposes of Section 903.2, the following definitions and meanings shall apply:

**Alteration:** Alteration shall include, but not be limited to, alteration of floors, walls, partitions, ceilings, electrical, plumbing or mechanical systems. Alterations to decorative coverings of floors, walls, partitions and ceilings shall not be included, nor shall the alteration or replacement of electrical or plumbing fixtures and trims be included, so long as the underlying piping, electrical raceways, etc., are not altered. Exterior facade alterations shall not be included, unless egress capacity is reduced.

**Aggregate net floor area:** The total of the area contained within the exterior walls of a building or structure on all stories, including portions of stories below grade that are occupied for purposes other than storage or mechanical equipment. For dwellings, areas normally exempt from fire sprinkler requirements shall not be included.

**Aggregate area of alteration:** for the purposes of determining the area affected by alteration, the code official shall include the floor area of all rooms and areas reduced or enlarged by such work, the floor area of all rooms and areas whose electrical, plumbing or mechanical systems or infrastructure are altered, and the floor area of all rooms whose egress capacity or travel distance is adversely affected. Floor areas shall include all interior walls, columns, hallways, partitions and stairways. Exterior walls shall not be included.

**Model code:** The ICC International Building Code - 2000, without amendment or alteration.

**Reconstruction:** See alteration.

**Remodeling:** See alteration.”

Table 903.2 of the Barrington Building Code is hereby added to provide as follows:

**“Table 903.2  
FIRE GRADING OF OCCUPANCY TYPES**

<b>OCCUPANCY TYPE</b>	<b>DESCRIPTION</b>	<b>Fire Grading</b>
<b>U Utility/Miscellaneous</b>	Accessory buildings and structures not classified	<b>Not Graded</b>
<b>IRC Residential</b>	Dwellings regulated by the International Residential Code	<b>1</b>
<b>A-5 Assembly</b>	Structures used for outdoor assembly intended for participating in or reviewing activities	<b>2</b>
<b>B Business</b>	Buildings occupied for the transaction of business	<b>2</b>
<b>E Educational</b>	Structures which accommodate more than five persons for educational purposes through the 12th grade	<b>2</b>
<b>F-2 Factory/Industrial</b>	Low-hazard factories which involve the fabrication or manufacturing of noncombustible materials	<b>2</b>
<b>I-1 Institutional</b>	Buildings which house sixteen or more persons who must live in a supervised environment, but are physically capable of responding to an emergency situation without assistance	<b>2</b>
<b>I-2 Institutional</b>	Buildings used for medical/custodial care of six or more persons on a 24-hour basis, who are not capable of responding to an emergency situation without assistance	<b>2</b>
<b>S-2 Storage</b>	Storage of low -hazard contents	<b>2</b>
<b>A-1 Assembly</b>	All theaters	<b>3</b>
<b>A-2 Assembly</b>	Assembly uses intended for food and/or drink consumption	<b>3</b>
<b>A-3 Assembly</b>	Buildings and structures occupied exclusively for worship	<b>3</b>
<b>A-4 Assembly</b>	Assembly uses for viewing of indoor sporting events	<b>3</b>
<b>F-1 Factory/ Industrial</b>	Moderate-hazard factories	<b>3</b>
<b>I-3 Institutional</b>	Buildings inhabited by six or more persons who are under restraint	<b>3</b>
<b>M Mercantile</b>	Buildings used for display and sales of merchandise	<b>3</b>
<b>R-1 Residential</b>	Hotels, motels and boarding houses	<b>3</b>
<b>R-2 Residential</b>	Multiple family dwellings having more than two dwelling units	<b>3</b>
<b>R-3 Residential</b>	Two family dwellings over three stories in height	<b>3</b>
<b>R-4 Residential</b>	Residential/Assisted Care Facilities	<b>3</b>
<b>S-1 Storage</b>	Storage of moderate-hazard contents	<b>3</b>
<b>H Hazard</b>	All H Hazard use groups	<b>4</b>

”

Section 903.2.1 of the Barrington Building Code is hereby deleted.

Section 903.2.1.1 of the Barrington Building Code is hereby deleted.

Section 903.2.1.2 of the Barrington Building Code is hereby deleted.

Section 903.2.1.3 of the Barrington Building Code is hereby deleted.

Section 903.2.1.4 of the Barrington Building Code is hereby deleted.

Section 903.2.1.5 of the Barrington Building Code is hereby deleted.

Section 903.2.2 of the Barrington Building Code is hereby deleted.

Section 903.2.3 of the Barrington Building Code is hereby deleted.

Section 903.2.3.1 of the Barrington Building Code is hereby deleted.

Section 903.2.4 of the Barrington Building Code is hereby deleted.

Section 903.2.4.1 of the Barrington Building Code is hereby deleted.

Section 903.2.4.2 of the Barrington Building Code is hereby deleted.

Section 903.2.4.3 of the Barrington Building Code is hereby deleted.

Section 903.2.5 of the Barrington Building Code is hereby deleted.

Section 903.2.6 of the Barrington Building Code is hereby deleted.

Section 903.2.6.1 of the Barrington Building Code is hereby deleted.

Section 903.2.7 of the Barrington Building Code is hereby deleted.

Section 903.2.8 of the Barrington Building Code is hereby deleted.

Section 903.2.9 of the Barrington Building Code is hereby deleted.

Section 903.2.10 of the Barrington Building Code is hereby deleted.

Section 903.2.10.1 of the Barrington Building Code is hereby deleted.

Section 903.2.10.2 of the Barrington Building Code is hereby deleted.

Section 903.2.11 of the Barrington Building Code is hereby deleted.

Section 903.2.11.1 of the Barrington Building Code is hereby deleted.

Section 903.12 of the Barrington Building Code shall provide as follows:

**“Section 903.12 Windowless story.** An automatic fire suppression system shall be provided throughout every story or basement of all buildings.”

Section 903.2.12.1 of the Barrington Building code is hereby deleted.

Section 903.2.12.1.1 of the Barrington Building code is hereby deleted.

Section 903.2.12.1.2 of the Barrington Building code is hereby deleted.

Section 903.2.12.1.3 of the Barrington Building code is hereby deleted.

Section 903.3.1.1.1 of the Barrington building Code shall provide as follows:

**“Section 903.3.1.1.1 Exempt locations.** Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance-rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the building official.
3. Generators and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours, where approved by the building official.
4. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic fire alarm system and are separated from the remainder of the building by a wall with a fire-resistance rating of not less than 1 hour and a floor/ceiling assembly with a fire-resistance rating of not less than 2 hours.
5. In rooms or areas that are of noncombustible construction with wholly noncombustible contents, where approved by the building official.”

Section 903.3.1.4 of the Barrington Building Code shall provide as follows:

**“Section 903.3.1.4 Retrofit sprinkler systems.** Where permitted by Section 903.2, automatic sprinkler systems that otherwise comply with the requirements of Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3 shall be permitted to be supplied from a minimum 3/4" diameter domestic water supply source.”

Section 903.3.5.1.1 of the Barrington Building Code is hereby deleted.

Section 903.3.5.1.2 of the Barrington Building code is shall provide as follows:

**“Section 903.3.5.1.2 Combination services.** For retrofit sprinkler systems, a single combination water supply shall be permitted to be installed in accordance with

Section 903.3.1.4.”

Section 903.4 of the Barrington Building Code shall provide as follows:

**“Section 903.4 Sprinkler system monitoring and alarms.** All valves controlling the water supply for automatic sprinkler systems and water-flow switches on all sprinkler systems shall be electrically supervised.

**Exception:** Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.”

Section 903.4.2 of the Barrington Building code shall provide as follows:

**“Section 903.4.2 Alarms.** Approved audio-visual devices shall be connected to every automatic sprinkler system. Such alarm devices shall be activated by water flow and shall be located in an approved on the exterior of the building. Additional approved devices shall be provided within the interior of the building as required by the building official.”

Section 903.6 of the Barrington Building Code shall provide as follows:

**“Section 903.6 Installation and repair.** Only individuals who have received a permit issued by the Village of Barrington shall be permitted to install or repair fire suppression and standpipe systems.”

Section 906.1 of the Barrington Building Code shall provide as follows.

**“Section 906.1 General.** Portable fire extinguishers conforming to NFPA 10 - 98 shall be installed in the following locations:

1. In all occupancy groups, except those governed by the *Barrington Residential Code*;
2. In all areas containing commercial kitchen exhaust hood systems;
3. In all areas where fuel is dispensed;
4. In all areas where a flammable or combustible liquid is used in the operation of spraying, coating or dipping;
5. In all occupancies in Group I-3 at staff locations. Access to portable extinguishers shall be permitted to be locked;
6. On each completed floor of buildings under construction;
7. In any laboratory, shop or other room occupied for similar purposes; and
8. Wherever required by the provisions of the *Barrington Fire Prevention Code*.”



Section 907.2 of the Barrington Building Code shall provide as follows.

**“Section 907.2 Where required:** Approved automatic fire alarm and detection systems shall be installed and maintained in full operating condition, as specified in this code, in all buildings, structures, public garages and open parking structures. Approved automatic fire alarm and detection systems shall be installed and maintained in full operating condition in all buildings or structures required to be equipped with automatic fire suppression systems. Approved automatic fire detection systems shall be installed in all attics and concealed spaces. There shall be no exception from the automatic fire detection requirements for buildings equipped with automatic sprinkler systems, unless authorized by the Fire Official.

**Exceptions:**

1. Private garages designed for four vehicles or less.
2. Use Group U when approved by the building official and the fire official.”

Section 907.2.1 of the Barrington Building Code is hereby deleted.

Section 907.2.1.1 of the Barrington Building Code is hereby deleted.

Section 907.2.1.2 of the Barrington Building Code is hereby deleted.

Section 907.2.2 of the Barrington Building Code is hereby deleted.

Section 907.2.3 of the Barrington Building Code is hereby deleted.

Section 907.2.4 of the Barrington Building Code is hereby deleted.

Section 907.2.5 of the Barrington Building Code is hereby deleted.

Section 907.2.6 of the Barrington Building Code is hereby deleted.

Section 907.2.6.1 of the Barrington Building Code is hereby deleted.

Section 907.2.6.2 of the Barrington Building Code is hereby deleted.

Section 907.2.6.2.1 of the Barrington Building Code is hereby deleted.

Section 907.2.6.2.2 of the Barrington Building Code is hereby deleted.

Section 907.2.6.2.3 of the Barrington Building Code is hereby deleted.

Section 907.2.7 of the Barrington Building Code is hereby deleted.

Section 907.2.7.1 of the Barrington Building Code is hereby deleted.

Section 907.2.8 of the Barrington Building Code is hereby deleted.

Section 907.2.8.1 of the Barrington Building Code is hereby deleted.

Section 907.2.9 of the Barrington Building Code is hereby deleted.

Section 907.2.10 of the Barrington Building Code is hereby deleted.

Section 907.2.10.1 of the Barrington Building Code is hereby deleted.

Section 907.2.10.1.1 of the Barrington Building Code is hereby deleted.

Section 907.2.10.1.2 of the Barrington Building Code is hereby deleted.

Section 907.2.10.1.3 of the Barrington Building Code is hereby deleted.

Section 907.8 of the Barrington Building Code shall provide as follows.

**“Section 907.8 Zones.** Except as otherwise approved by the fire official, each floor shall be zoned separately and a zone shall not exceed 10,000 square feet. The length of any zone shall not exceed 100 feet in any direction. Automatic sprinkler system zones shall not exceed the area permitted by NFPA 13. Separate zoning for devices shall be provided as required by NFPA 72.”

Section 907.10 of the Barrington Building Code shall provide as follows.

**“Section 907.10 Local control functions.** Automatic fire detectors utilized for the purpose of performing local control functions shall be a part of a fire alarm system. The detector shall, upon actuation, perform the intended function and activate the alarm-notification devices or activate a visible and audible supervisory signal at a constantly attended location.”

Section 907.15 of the Barrington Building Code shall provide as follows.

**“Section 907.15 Fire suppression systems/fire protection systems:** All automatic fire suppression systems and fire protection systems shall transmit to and be supervised by the Barrington Fire Department dispatch center. All required fire alarm systems shall transmit alarm, trouble and supervisory signals to the Barrington Fire Department dispatch center. Installation shall be in accordance with NFPA 72. ”

Section 907.20 of the Barrington Building Code is hereby added to provide as follows.

**“Section 907.20 Approval:** Automatic fire alarm systems shall be the audio-visual type approved for the particular application and shall only be used for detection and signaling in the event of a fire. The automatic detecting devices shall be smoke detectors, except an approved alternative type of detector shall be installed in spaces such as boiler rooms where during normal operation products of combustion are present in

sufficient quantity to cause activation of alarm. Only those individuals or firms who have been licensed by the State of Illinois and who have received a permit issued by the Village of Barrington shall be permitted to install, repair or service automatic fire alarm systems.”

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Amendments to the 2000 International Residential Code

Section R328 is hereby added to the Barrington Residential Code to provide as follows:

**“Section R328 Fire Suppression Systems”**

Section R328.1 is hereby added to the Barrington Residential Code to provide as follows:

**“Section R328.1 Where required.**

1. An automatic fire sprinkler system approved by the building official shall be installed in all new construction of residential buildings (including one and two family dwellings) within the Village of Barrington.
2. An automatic fire sprinkler system approved by the building official shall be installed throughout all residential buildings (including one and two family dwellings) within the Village of Barrington, in which there has been an aggregate area of remodeling, reconstruction or alteration of 100% of the aggregate net floor area of the building, as defined in this section.

**Exceptions:**

1. Additions to one and two family structures.
2. Remodeling, reconstruction or alteration of one and two family structures where the aggregate area of alteration does not constitute 100% of the aggregate net floor area of the structure, as defined in this section.”

Section R328.2 is hereby added to the Barrington Residential Code to provide as follows:

**“Section R328.2 Criteria.** The automatic fire sprinkler system shall be constructed to conform to the provisions of NFPA 13D.”

Section R328.3 is hereby added to the Barrington Residential Code to provide as follows:

**“Section R328.3 Definitions.** For the purposes of this Section 328, the following definitions and meanings shall apply:

**Alteration:** Alteration shall include, but not be limited to, alteration floors, walls, partitions, ceilings, electrical, plumbing or mechanical systems. Alterations to decorative coverings of floors, walls, partitions and ceilings shall not be included, nor shall the alteration or replacement of electrical or plumbing fixtures or trims be included, so long as the underlying piping, electrical raceways, etc. are not altered. Exterior façade alterations shall not be included, unless egress capacity is

reduced.

**Aggregate net floor area:** The total of the area contained within the exterior walls of a building or structure on all stories, including portions of stories below grade that are occupied for purposes other than storage or mechanical equipment. For dwellings, areas normally exempt from fire sprinkler requirements shall not be included.

**Aggregate area of alteration:** For the purposes of determining the area affected by alteration, the building official shall include the floor area of all rooms and areas reduced or enlarged by such work, the floor area of all rooms and areas whose electrical, plumbing or mechanical systems or infrastructure are altered, and the floor area of all rooms whose egress capacity or travel distance is adversely affected. Floor areas shall include all interior walls, columns, hallways, partitions and stairways. Exterior walls shall not be included.

**Model building code:** The ICC International Building Code - 2000, without amendment or alteration.

**Model residential code:** The ICC International Residential Code – 2000, without amendment or alteration.

**Reconstruction:** See alteration.

**Remodeling:** See alteration.”